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Paper practices in institutional talk: How financial advisors impress their clients

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Abstract. Paper is a persistent element of financial advisory encounters, despite the increasing digitisation of the financial industry. We seek to understand the reasons behind the resilience of paper-based encounters and advisors' resistance to change by understanding the paper's roles in financial advisory encounters. While applying multimodal analysis to a set of field and experimental data, we point to a range of prevalent advisory practices that rely on the use of paper documents and hand-written notes. We focus on the choreography of paper and how this intersects with the participants' institutional identities and goals. Specifically, we show how advisors' paper-oriented actions seek to convey a positive impression about the advisor and about the bank to the client, i.e. how they engage in seemingly mundane practices to impress their clients. Paper is far more than a medium for saving and presenting information: it is an interaction resource, a semiotic resource and an institutional resource; all these aspects of paper come into play during a financial advisory encounter. The manuscript concludes with suggestions on the design of technologies that may potentially replace the paper in financial advisory encounters and assesses the likelihood of this in light of the results.

1 Introduction

The use of documents in advisory and service encounters is an all-round routine: medical personnel fill out paper forms during admission (Berg, 1996), policemen take notes when recording a case (Sellen and Harper, 2002), supervisors go through documents together with their students (Svinhufvud and Vehviläinen, 2013), and financial advisors take notes and explain things by drawing on paper during financial advisory encounters. Despite the technological development and infusion of modern technologies into services, for instance through online service provision channels, face-to-face encounters have remained paper-based. The persistent presence of paper in the advisory encounters is not in itself a problem. On the contrary, we show how essential paper may be for the choreography of interactions during an encounter. However, post-crisis policies (EU, 2014; CH, 2015; DE, 2016) oblige financial institutions to support their service encounters with digital tools: Choosing appropriate products, documenting the advisory process and outcome, and educating clients is increasingly less feasible via conventional tools such as brochures, paper and a pen. Further, the banks wish to use the information captured in advisory sessions for their marketing. Thus, numerous design and research projects have been launched to develop dedicated IT to support financial advisory encounters (Schwabe and Nussbaumer, 2009; Heyman and Artman, 2015; Kilic et al., 2015). Many studies propose replacing paper-based interactions with interactive IT-based elements. Nonetheless, such applications have had little commercial success, particularly in retail banking (Schwabe and Nussbaumer, 2009; Heyman and Artman, 2015). We argue that the reason for this lack of success includes the misunderstanding of the paper's roles in an advisory encounter: paper's functions go far beyond a medium for note-taking and the visualisation of information. While focusing on mortgage advisory encounters at a bank, we describe paper practices and illustrate how paper is used to establish and preserve a specific social order, to make impressions on a client, and to impose a structure in the cooperative, face-to-face interactions between advisor and advisee.

Understanding paper's roles in advisory encounters has practical and scientific potentials: Service designers approaching face-to-face service provision can derive design requirements for an envisioned solution while referring to observed practices. The managers responsible for face-to-face advice-giving may benefit from deeper knowledge about what happens during advisory encounters and the meanings of certain events. Design researchers pursuing a paperless office and a digitised workplace may gain insights into a challenging area that to date has escaped the pressure of digitisation and has survived in the highly computerised environment of financial institutions. Finally, scientists who use ethnographically inspired methods to study interpersonal interactions may find inspiration in our material-oriented approach, which roots in the multimodal and mediated perspectives (Scollon, 2001; Kress, 2009). Our results describe unfolding interactions in a specific institutional

setting: a financial advisory encounter combines the monetary character of selling and the advisory character of counselling. Our study goes beyond existing institutional talk studies focused on instances with monetary, for-profit interests (Darr and Pinch, 2013) or with a non-commercial character (Berg, 1996; Sellen and Harper, 2002; Svinhufvud and Vehviläinen, 2013). Overall, we point to design issues as well as thought-provoking observations from a dynamic field.

We report on the results of a multimethod study designed to answer this research question: *Which paper practices do participants engage in during a financial advisory encounter?* We define a single practice as a type of routine or action that consists of an infinite number of micro-behaviours, which participants engage in, but normally unreflectively (Scollon, 2001; Nicolini, 2012). A paper practice is a practice, an action or routine type, that relies on the use of paper, i.e. a blank sheet of paper, a hand-written note, a printout or a document. A practice may involve more than a single sheet of paper, and may refer to this sheet as a holistic object or to its content. To identify various paper practice types and to comprehensively describe them, we launched a fieldwork study using ethnomethodologically inspired interview and observation methods in a workplace environment (Luff et al., 2000) supported by multimodal analysis of previously collected video and workshop data. We will summarise and discuss the results.

2 Related work

2.1 Financial service encounters as institutional talk

Financial service encounters form a specific advisory encounter type, i.e. transactional interactions in which an advisor provides an advisee with advice regarding a service or a product (Jungermann and Fischer, 2005). In financial service encounters, the advisor is normally a designated bank clerk who is trained to provide advice on the products offered by her[1] employer. The advisee may be a current or a prospective client of the bank who is searching for an appropriate financial product (e.g. a mortgage) (Oehler and Kohlert, 2009). Financial service encounters have received attention from a descriptive and analytical perspective (Verhallen et al., 1997), a prescriptive perspective (Moulton, 2011; Bradbury et al., 2014) and a design perspective (Heinrich et al., 2014b; Heyman and Artman, 2015). The research provides a well-motivated and founded yet global and general picture of financial service encounters. Particularly, the research oriented to interactional micro-behaviours of the involved parties is very limited (Kilic et al., 2016), besides the fact that many studies generally agree on the crucial role of interpersonal communication on advisor and advisee satisfaction with a service encounter (Apte and Vepsäläinen,

[1] For a simple gender balance and for the clarity of the argument, we refer to the financial advisor as a female (*she*, *her*) and to the advisee (client) as a male (*he*, *his*).

1993; Schwabe and Nussbaumer, 2009; Dolata and Schwabe, 2017). We seek to deepen the understanding of advisory encounters while pointing to a set of characteristic micro-behaviours that involve the use of paper in the interaction.

Most advisory encounters, including financial service encounters, are key examples of institutional talk. In contrast to spontaneous and private dialogue, institutional talk involves participants whose goals are tied to their institutional identities (provider vs. beneficiary), occurs in a predefined context according to a presumed scenario, which in turn constrains the allowable contributions to the interaction (Drew and Heritage, 1992). For instance, an encounter between a doctor and a patient happens mostly in a hospital or at a local surgery and follows a scenario of a medical examination in which the patient contributes the description of his or her complaints, and the doctor contributes treatment suggestions. Similarly, in a mortgage advisory service, the client's contributions would include information on his or her monthly income and savings, a property or properties they would like to buy and likely plans for the future, while the advisor's contributions would include an assessment of creditworthiness or information on the configuration of a possible mortgage (Verhallen et al., 1997). In other words, while in a transactional encounter the participants exhibit asymmetries regarding access to virtual or material goods, the participants in an advisory encounter exhibit knowledge differences about the process and the content (Ten Have, 1991): First, the advisor has knowledge about the actions sequence in the encounter, while the advisee can only assume a process using his or her previous experience and general knowledge. Second, the advisor has knowledge on the solution domain, and the advisee has knowledge on the problem domain. During an advisory encounter, the advisor and the advisee engage in interactive problem-solving to reduce these asymmetries jointly and cooperatively (Dolata and Schwabe, 2017). The study of asymmetry in institutional encounters (Adelswärd et al., 1987; Itakura, 2001; Dolata and Schwabe, 2016) confirms that the provider dominates the situation in terms of interactional resources: Based on the analysis of the verbal conduct (amount of words, amount of time, content), the studies note that providers have interactional dominance in and responsibility for turn distribution, time allocation and conversation focus (Itakura, 2001). While some studies consider non-speech characteristics such as gestures (Heath and Luff, 2011; Mondada, 2013) or the manipulation of objects (Hazel and Mortensen, 2014; Mondada and Svinhufvud, 2016), they only marginally address the features of institutional talk, and do not systematically discuss how material conduct reflects asymmetry and dominance in institutional talk. Instead, they offer punctual, localised descriptions that at most let us assume that observing materials use may characterise dominance during the encounter. For instance, a provider who points at an item in a form does it to inform the beneficiary about the intention to move the discussion to a specific point (Mikkola and Lehtinen, 2014), or the provider who browses through a pile of files gives the beneficiary the feeling that he is one case among many (Svinhufvud and Vehviläinen, 2013). While these studies have made

first steps towards multimodal and mediated analysis of conduct in institutional encounters (Scollon, 2001; LeVine and Scollon, 2004; Kress, 2009; Mortensen, 2012), we seek to shed more light on material conduct in institutional talk, especially on the dominance relationship.

Institutional talk includes many encounter types: some focus on a transaction and others on counselling, some are short and others long, some are one-time meetings while others are a single episode in a longer relationship. Multiple studies approach these differences while following an ethnomethodologically informed method set (including *ethnomethodologically informed conversation analysis*; EMCA) (Sacks et al., 1974; Goodwin and Heritage, 1990; Heritage, 2005). Most studies in this realm focus on non-commercial voluntary encounters with doctors or teachers (e.g. Mondada, 2013; Svinhufvud and Vehviläinen, 2013; Svinhufvud, 2016) – following Sacks et al. (1974). However, some studies address transactional encounters as instances of institutional talk – they have analysed interactions at flea markets (Clark and Pinch, 1986; Pinch and Clark, 1986), in stores (Darr and Pinch, 2013) and in trade shows (Darr and Pinch, 2013; Wooffitt et al., 2013), where the act of selling is of primary importance. Through the analysis of speech and gestures, they identified mechanisms used by sales personnel to intensify customers' obligation to buy, and propose theatre as an applicable metaphor to explain the interactional conduct between sellers and buyers (Darr and Pinch, 2013). They have also called for intensive research into the material organisation of transactional encounters (Darr and Pinch, 2013). We seek to answer this call, focusing on a specific institutional encounter type, financial service encounters, which have always combined elements of selling and counselling, and are currently evolving towards interactive problem-solving encounters (Jungermann, 1999; Dolata and Schwabe, 2017), thus becoming cooperative; yet, both participants in such an encounter have monetary incentives, i.e. selling or getting a target product at the best price. We argue that exactly this combination between selling and counselling drives the material conduct during a financial advisory encounter: Sheets of paper are used to reduce the knowledge asymmetry between the participants; they are used in ways that support the selling or buying of a product. How this tension is reflected in the material conduct between the advisor and the advisee remains an open question.

2.2 Paper – between affordance and practice

Studies of material conduct at work – be it in distributed, simultaneous or collocated collaboration – often come down to paper as the central material element in the workplace (Sellen and Harper, 2002; Luff et al., 2009; Svinhufvud and Vehviläinen, 2013). Despite methodological or domain-related differences, most studies adhere to one of the following perspectives (albeit not always explicitly): they either analysed the practices established with use of paper or the affordances of paper. In other words, they either assume the priority of practice as the nexus of

interaction in social, organisational, cultural or situational contexts, or they give priority to material and its affordances as a source of interactional conduct (Fayard and Weeks, 2014). Fayard and Weeks (2014) provide an extensive theoretical discussion of the tension between these two directions and how they complement each other. We use both the practice and affordance perspectives to discuss paper's roles in interaction: *How do specific practices shape the roles of and attach meaning to paper? How do specific affordances of paper enable or favour specific practices?*

The notion of paper and the notion of its affordances are interconnected: paper is defined by the actions it affords, and explanations of *affordance* often use the example of a sheet of paper (McLuhan et al., 1967; Sellen and Harper, 2002; O'Neill, 2008). Based on Gibson's (1979) ecological approach, Norman (1988) adapted *affordance* to the field of human computer interaction (HCI). The term has since been widely adopted and re-interpreted, leading to a dilution of its meaning (Norman, 1999). We use a definition shared across the literature on paper that relates affordance to objects' properties that determine the possibilities for action (Sellen and Harper, 2002), described as facts about action and interaction (Gaver, 1996). This notion of affordance is not limited to a singular object or a single user – a set of objects that form an environment can afford specific (inter)actions. In this sense, the theory of affordance offers a perspective on how the construction of objects shapes and patterns practices (Fayard and Weeks, 2014).

When considering paper's affordances, the research lists and discusses technical, mechanical or visual characteristics of paper that afford particular interaction types (Gaver, 1996; Sellen and Harper, 2002; Piper and Hollan, 2009). Sellen and Harper (2002) present affordances of paper for reading, document-filing and micromanagement. They compare which actions (e.g. in an air traffic control centre or at a police department) are afforded by paper and by IT in order to make suggestions on the improvement of IT – paper affords among others easy navigation through documents, reading across many documents, marking up a document while reading, interweaving reading and writing, controlling access to a single document, and joint viewing. While Sellen and Harper have provided deep insights into work conduct in chosen settings, they focused on back office activities and, even in the police department case, they reported only briefly on paper's use in conversations between police staff and witnesses, in which police staff used paper simply as a notepad.

Gaver (1996) took another approach to describe paper's affordances: he discussed the choices people make in their daily work between paper and dominating technologies (from 1996, e.g. electronic mail). Based on deductive argumentation, he described paper's affordances in such areas as input (e.g. greater flexibility of input on paper owing to a variety of input tools), visibility and physicality. Gaver points to the integration of data storage and display that is a characteristic of paper – in his view, paper affords higher predictability: by simply looking at a pile of paper, people can estimate how much content is stored there; by spreading several

sheets of paper across a table, people can easily predict a document's internal structure; however, owing to the display-storage integration, users cannot change the content of a sheet of paper without changing its visual appeal. Gaver does not discuss the fact that, depending on the context, the paper's affordances may differ – predicting the internal structure of a book does not rely on spreading its pages on the table. Thus, while we accept Gaver's (1996) account of paper having a set of fundamental features, we don't follow his physical approach to paper. Owing to their physical emphasis, most affordance-oriented studies overlook the discussion on how paper's affordances may reinforce or undermine the features imposed by the context, i.e. they provide limited accounts of how paper may support or impair the role distribution or general character of institutional talk. Recent changes in ecological psychology have opened a discussion of the relationships between a user's background and routines and affordances (Leonardi, 2011; Fayard and Weeks, 2014): *Which affordances work in practice, 'in the wild'? How should we design artefacts for specific practices to emerge?*

Other studies that seek to understand paper's practical roles rely on the notion of *practice*. Like affordance, practice has attracted much attention across the boundaries of scientific and professional communities (Nicolini, 2012; Kuutti and Bannon, 2014), leading to a variety of perspectives and framings (Wulf et al., 2011; Nicolini, 2012; Shove et al., 2012). We follow a specific notion of practice that originates in work on mediated discourse (Scollon, 2001; LeVine and Scollon, 2004), multimodality (Kress, 2009) and multimodal conversation analysis (Mortensen, 2012). Following assumptions that are common to these sources, we see mediated action as an appropriate unit of analysis for understanding paper practices. Actions are grounded in objects and persons in time and space, and are situated, real-time, irreversible and unique (Scollon, 2001). At the same time, actions also depend on their contexts (Scollon, 2001); thus, an encounter's institutional character clearly and strongly influences the allowable and de facto occurring actions (Hazel and Mortensen, 2014). A material object, such as a sheet of paper, is a semiotic mediational resource – it generates and transfers meaning when used in a specific action (Kress, 2009). Further, it provides interaction partners with its constraints and affordances, and it is intertextual and interdiscursive, i.e. the meaning it generates or transfers intersects with the paper's meaning in other actions (Scollon, 2001; Kress, 2009). *Practices* define this milieu of actions: they describe the action types that humans directly and repeatedly engage in, but normally do not attend to them in analytical, conscious ways (Scollon, 2001; Mortensen, 2012; Nicolini, 2012). This notion of practices shares much with the view of practice proposed in computer supported cooperative work (CSCW) research: practice as a routinised human action, the smallest unit of analysis in social phenomena, patterns of action that encompass mental, physical, material and object-oriented activities (Schmidt, 2011; Wulf et al., 2011; Shove et al., 2012). Importantly, this take on practices stresses their dependence on the use of tools and media and the fact that

practices are collective interaction patents that are instantiated in single, contextualised actions that may vary across situations (Wulf et al., 2011). Schmidt (2011) argues that the study of practices is transformative: through redesigns of tools and materials, one can make users engage in specific actions and can therefore expect changes in actions patterns (Wulf et al., 2011). CSCW uses the notion of practice to describe a person's interaction with a technology in a social or work context with the goal of rationalising and transforming existing practices via IT. We approach *paper practices*, i.e. we describe the meanings of sheets of paper in a prototypical advisory encounter and observe how this intersects with other practices (e.g. conversational or organisational ones) and with an individual's accumulated experience of practices. The identified practices are also the starting point to identify potential for IT as an instrument for collaboration support and practice transformation.

The research stream that studies paper practices while looking at situated action has brought insights into paper documents' roles in many specific areas. Weilenmann and Lymer (2014), who looked at how paper documents drive the work of television journalists, point to the difference between incidental and essential uses of paper: while some activities only imply the use of paper, others are built around a paper document (e.g. to move a Post-it from one table to another means transferring the responsibility for the task thereon). In medicine, studies on paper practices (Berg, 1996; Heath and Luff, 1996; Jones, 2009) stress the fact that paper forms dominate the conversation between medical staff and patients and are thus an origin of specific practices: the studies show how a sheet of paper, through its content, form and presence dominates and drives practices (Heath and Luff, 1996; Jones, 2009). Further studies approach paper practices in such settings as student supervision encounters (Svinhufvud and Vehviläinen, 2013; Mondada and Svinhufvud, 2016), appraisal interviews (Mikkola and Lehtinen, 2014), debates on democracy (Mondada, 2013), copy shop purchases (Moore et al., 2010) and underground control centres (Heath and Luff, 1992). Many of these studies (Svinhufvud and Vehviläinen, 2013; Mikkola and Lehtinen, 2014; Weilenmann and Lymer, 2014; Mondada and Svinhufvud, 2016) point to the dual nature of paper practices. They differentiate between practices that rely on the material nature of paper and those oriented to a paper's contents (Weilenmann and Lymer, 2014). To use paper as a material object is to emphasise its physical nature – it involves moving paper in space, folding it, pointing at it, etc. (e.g. Mondada, 2013). To use paper as a textual resource means to focus on its content – be it a text, a multimodal content or, in specific situations, a paper's form; for instance, paper's textual nature is essential during collaborative reading or writing (e.g. Mondada and Svinhufvud, 2016). The study of practices points to a key feature of paper – its dual nature; it also makes clear that paper's features come to play at different intensities depending on the context. Regarding institutional talk, results remain indecisive: while some studies

stress the importance of material practices (Svinhufvud and Vehviläinen, 2013; Hazel and Mortensen, 2014), others point to paper documents' contents as the driving element (Heath and Luff, 1996; Jones, 2009; Weilenmann and Lymer, 2014).

While the affordances view of paper makes clear how paper's physical features are reflected in the ways it is used, the practices perspective points to how paper's different qualities come together in particular actions and how these actions are shaped by paper's features. Paper's affordances allow for a range of hypothetical action possibilities, including information sorting, storing and transfer. The study of specific practices illustrates how these possibilities turn into real actions: turning over a sheet of paper leads to topic shifts, and forwarding a piece of paper transfers responsibilities. Further, the study of practices show how paper's features and contents constrain actions, while inducing a specific order of interaction, enforcing or reinforcing practices it was thought to support. Thus, to understand paper's roles in financial advisory encounters, the practices perspective seems particularly appropriate. We build on identified practices as well as the reasons behind them to discuss whether IT can adequately support and constrain interactions between a client and an advisor.

2.3 Designing for financial advisory encounters

The financial industry is undergoing radical changes owing to digitisation, which increases the pressure on the financial advisory encounters. Fintech startups develop business models that undermine traditional, face-to-face advisory services, including via robo-advice (Arwas et al., 2016; Zavolokina et al., 2016a; Zavolokina et al., 2016b). Regulators expect banks to guarantee clients' understandings of content; this goes beyond the traditional signature below the fine-print (EU, 2014; CH, 2015; DE, 2016). Finally, banks' managers are seeking to streamline, standardise and make advisory encounters more attractive, in order to stand out from competitors (Schwabe and Nussbaumer, 2009). Overall, the financial institutions are increasingly examining opportunities to enhance, redesign or replace advisory services, thereby attracting the attention of IS and CSCW/HCI design researchers.

Nearly all research that designs for advisory services, specifically financial advisory services, seems to have an implicit, unspoken assumption: *paper is part of the problem*. Thus, researchers propose designs that involve reality-based interaction and attraction tools (Jacob et al., 2008): widgets and interaction areas replace pieces of paper; flexible and interactive graphics replace brochures and drawings; touch and other natural input methods replace pens (Giesbrecht et al., 2013; Heinrich et al., 2014a; Heyman and Artman, 2015; Kilic et al., 2015; Comes and Schwabe, 2016). Simultaneously, new devices with various formats are appearing and are adding additional features: tablet computers enable the capturing of pictures during mobile advisory encounters (Maetje, 2014; Giesbrecht et al., 2015); multi-user table-top displays are entering the stationary scenario while making the data

persistent and data transfer more effective (Nussbaumer et al., 2012; Heinrich et al., 2014b; Heyman and Artman, 2015); finally, recent improvements in augmented reality, for instance, in health (Butt and Navarro, 2016) or library services (Meredith, 2015), lead us to expect financial services to become dependent on augmented technologies, including paper-augmented systems (Luff et al., 2007). Besides technical improvements, systems designed for financial advisory encounters also claim to establish new interaction principles: spaces to support shared understandings and transparency (Nussbaumer et al., 2012), experiential learning to enable informed client decision-making (Heinrich et al., 2014b), and joint profiling to stimulate client data exchange and to ensure individualised offerings (Kilic et al., 2017). Overall, the studies address the declared goals of financial institutions, advisors and regulators. And, while doing so, they are moving away from paper. Despite the successes of the above solutions in experiments, their proliferation in real financial services has remained limited (Schwabe and Nussbaumer, 2009; Kilic et al., 2017). We argue that, among others, the elimination of paper practices has lowered their popularity. Thus, it is apt to study existing practices in advisory encounters.

2.4 Designing for paper-like interactions

While paper practices in service encounters have remained underexplored, CSCW has researched and supported paper practices in many other contexts. Research into collaborative writing and drawing has sought to make IT enable paper practices since the 1990s (Ishii and Kobayashi, 1992; McGee et al., 2000). These design efforts have augmented paper-based work practices, for instance, processing maps in an army command post via IT by enabling drawing or writing on digital copies of documents (McGee et al., 2000). While they have used practices as a source of inspiration, they don't consider the meanings of practices; instead, they have provided technological workarounds to imitate paper practices (McGee et al., 2000). Numerous similar studies continued to push for more paper-based interfaces in such domains as design (De Sá et al., 2009), control rooms (Butscher et al., 2013) or engineering education (Salvador et al., 2014). They have contributed principles and ideas that make IT support acknowledged practices that, to date, have depended on paper. However, they seldom discuss what these practices mean and how they intersect with paper's characteristics. Also, they don't question the observed practices and their necessity in given contexts. Thus, they have left many questions unanswered: *What does it mean when someone puts a Post-it on a blackboard? And what does this mean during brainstorming as opposed to work in a control room?*

Another research stream into paper-based interfaces has taken an affordances-oriented approach (Luff et al., 1992; Luff et al., 2007; Luff et al., 2009; Pyykkönen et al., 2013). Such studies change the affordances of digital technology to mimic

paper or extend paper's affordances to provide functionalities of digital technologies (Luff et al., 2007). However, they primarily consider simple usage scenarios and tasks (e.g. changing slides) (Luff et al., 2009). The augmentation of paper with digital technology still lacks real usage cases: Digital pen technologies that use special paper or infrared positioning, which have available for more than 15 years, remain niche products used almost solely for note-taking. Writing on touch-sensitive displays and tablets, which have been available for more than 20 years, became mainstream only two years ago, after the launch of new iPad and Surface devices. Finally, the use of a large table or table-top display in combination with a paper-based working environment remains an object of research. We argue that a lack of understanding of paper practices hinders the popularisation of these innovations. We seek to deepen the understanding of paper in institutional talk and discuss the potential of paper augmentation, considering the identified practices.

3 Methodology

Given the lack of understanding of paper practices in financial advisory encounters, we leverage multiple techniques to better understand paper's value and roles. We focus on the uses of paper in situated actions and in interactional and organisational contexts. We built our study around several data sources that both give access to interactions in a real context and provide the possibility to zoom in on interactional conduct including singular micro-behaviours. We use two data sources as described in the remainder of this chapter: 1) primary data – observational data from de facto financial service encounters collected in fieldwork and analysed in accordance with ethno-methodological standards for workplace observations (Luff et al., 2000), 2) supporting data – recordings from financial advisory encounter experiments analysed in accordance with multimodal discourse analysis. Further, our study would not be possible without our background knowledge of financial encounters and financial institutions collected in a decade of research (much of which has been published) (Schwabe and Nussbaumer, 2009; Heinrich et al., 2014a; Kilic et al., 2015; Dolata and Schwabe, 2017). Importantly, we confirmed all observations in the main data by systematically analysing the supporting data. We collected the primary and supporting data during a project with a regional, mid-size Swiss bank we call MoBa (Mortgage + Bank). MoBa focuses on the provision of mortgage contracts to retail clients, which includes individuals, families and small businesses, as well as finances purchases of new properties or the renovation of old properties. Mortgage advisory encounters are particularly important to our study. MoBa, the University of Zurich and a Swiss university of applied sciences started a joint project to develop a software to support advisory encounters. The authors of the current study (University of Zurich) analysed the status quo of the advisory encounter and for the evaluatedthe prototypes designed by the partners. The project lasts until late 2018: the final system is now under construction after a phase of user-centred design.

3.1 Primary data and analysis

Observations of de facto advisory sessions collected during fieldwork form our primary data source. We made the observations during financial advisory services conducted with real customers and real advisors involved in de facto mortgage advisory encounters, i.e. ones that lead to a serious offering from the bank and potential monetary consequences for both customers and the bank. In contrast to an experimental setting, where these consequences are simply projected (i.e. imagined) into the future and the interaction is done as if it were real, fieldwork allows for observations of de facto emotions and practices. While in the observed encounters, an advisor may be driven by the goal to make a deal, and the client to negotiate the best conditions, these are not the only drivers: Clients often chose MoBa because they wanted to support local business or because they have been MoBa clients for generations. Advisors often stress the fact that they want to find a compromise between the bank and the client in a transparent manner, and they consider themselves a part of local communities, which makes them mutually dependent on their clients. Thus, the clients and the advisors tend to engage in collaborative service encounters rather than simple transactions as in most retail scenarios. By observing real practices embedded in interactional and institutional roles and contexts, we seek to capture the complex nature of financial service encounters, which is crucial to understanding paper's roles therein.

Compared to experiments or simulations used in other studies (Heinrich et al., 2014a; Kilic et al., 2016; Kilic et al., 2017), data collected in fieldwork provides insights that are unaltered by the extensive control. However, data collection in a sensitive area such as financial advice remains a problem: specifically, access to real advisory sessions and their recording remain a challenge. Generally, banks and advisors do not agree to video or audio recordings of advisory sessions or client interviews, for two reasons: the confidentiality of clients' financial data and the natural character of the interaction, which may be disturbed by the presence of a camera or a voice recorder. Thus, we made concessions regarding data collection and adjusted our ethnomethodologically inspired workplace study (Luff et al., 2000): we limited our data collection to note-taking. Nonetheless, we could make up for these compromises by collecting extensive video material and interview recordings in the supporting data.

Learning about advisors' routines inside and outside the advisory sessions was crucial early on, to understand what drives the advisors in their normal workday and to see what role advising has therein (besides advising the clients, advisors also have administrative tasks, for instance, informing clients about the progress of their mortgage applications). The project partners agreed to conducting contextual inquiries with the bank advisors and to shadowing them throughout their days. Throughout eight full, non-consecutive days (70 hours on-site), we could observe five advisors from various branches of the bank conducting nine mortgage advisory sessions with various clients. We collected the data between October 2015 and

March 2016 in the form of chronological notes. Figure 1 shows example pages from the notes. Each day started with a short interview on what the advisor is currently pursuing and their general goals for the day. Finally, every day finished with an extended interview that focused on the observations made during that day; our focus was to understand the observed practices. In summary, fieldwork resulted in a set of notes and information collected during the interviews.

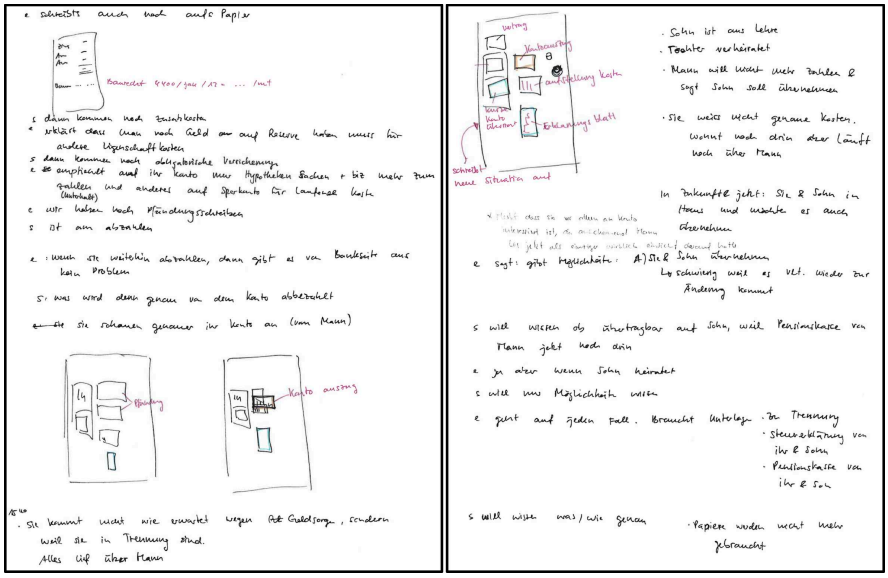


Figure 1. Two example pages from the fieldwork notes, including observations from a financial advisory encounter at MoBa.

The data collection and analysis were designed to yield a description of what happens during an advisory session. This description would provide material for the discussion of a social and interactional order, as evidenced in the use of *oriented objects*, i.e. objects that become relevant to the unfolding interaction through orientation, gestures, posture and verbal communication (Garfinkel and Rawls, 2002). During the analysis, we focused on the identification of relevant objects: 1) we indexed the objects mentioned in the notes and 2) identified passages in the interviews that refer to these objects; we then 3) reconstructed the behaviours involving these objects based on the notes and the advisor's explanations. We grouped the instances based on the similarity of the actions to provide a consistent and conclusive description of action types. We present these in the results section as practices and provide a rolling example based on the collected notes that illustrate the given practice (in the grey background). Then, in the discussion section, we go beyond the local, interactional sense of order (e.g. changing between tasks) and interpret the identified practices, considering the higher-level social order imposed by the institutional setting and the characteristics of paper. Thus, one can see the provided results as an adequate description and summary of the observed practices.

3.2 Supporting data and analysis

To enhance the study's reliability, we included a further data set into the current analysis. This extends the main data as follows: 1) it gives access to additional instances of advisory encounters and 2) it enables step-by-step analyses of the unfolding interaction – including mimics, low-level gesticulation and verbal activities. While the primary data offers insights into de facto advisory sessions, enhancing external validity, the collected material consists of notes that might be imprecise regarding the turn-by-turn interaction. To balance out this effect, we decided to include further data for exact sequence and structure analyses: the supporting data includes 24 videos of conventional advisory sessions collected in a design experiment (Mettler et al., 2014) – the controlled setting does not provide a fieldwork's external validity, but allows for multimodal coding and fine-tuned observations. We conducted the design experiment to test an early instance of a system developed in a joint project between the MoBa and the University of Zurich: the goal was to compare IT-supported advisory encounters against those conducted in a conventional manner – via the use of paper, pens and bank printouts and without use of IT, i.e. following a normal MoBa advisory process and setting. Each advisory session was done by a MoBa bank advisor to a test person acting as a client. Every client attended to a conventional and an IT-supported advice in a randomised order. We recorded all sessions by means of audio and video. The six advisors in the experiment provided eight advisory encounters each, i.e. 48 overall, but only half of them (no IT usage) are relevant to the study (we are researching existing practices, not IT-induced ones). After participating in two advisory sessions, we asked all participants to fill out a questionnaire and to participate in an interview that focused on the differences between the two encounter types. We conducted the experiments in July 2015 and analysed them in early 2016. In our analysis, we adhered to the standards of secondary data analysis for design research (Dolata et al., 2015) – we leveraged a portion of data collected during an evaluation experiment in a way that neither interfered with the study's original goal, nor ignored the original study design. Only one advisor from the experiment was later chosen for the fieldwork study (see the primary data). This further supports the study's reliability, while stressing the fact that the identified practices are neither person-specific nor related to a specific MoBa branch or setting.

We designed the video analysis to identify the paper-dependent routines advisors use during encounters. The analysis uses the methodological grounding for multimodal discourse analysis (Scollon, 2001; LeVine and Scollon, 2004; Kress, 2009): First, the researcher identified episodes where paper and other material were used – all interactions with paper (such as pointing at it, touching or moving it) were considered, resulted in more than 2,100 distinct episodes marked with the multimodal coding software ELAN (Brugman and Russel, 2004). Second, the researcher annotated the identified episodes with advisor actions, client behaviours, prior and subsequent events, and a general description of the episode. Third, the

researcher clustered the identified episodes based on the similarities in the above dimensions, leading to 22 distinct clusters. After a consolidation of clusters with insignificant or negligible differences (e.g. moving a printout vs. moving a page with own notes), this analysis provided 12 action types. After consolidation, the supporting analysis did not point to any new practice beyond the ones observed during in vivo observations. Thus, the supporting data contributed to the results, i.e. to the descriptions of all practices listed therein.

4 Results

To provide a comprehensive view of the material organisation of a financial advisory encounter, we focused on describing the steps involved in a set of most popular distinct practices. Inspired by the tradition of EMCA (Goodwin and Heritage, 1990) and multimodal analysis (Scollon, 2001; Kress, 2009), we provide a chronological, turn-by-turn description of the unfolding interaction. While the EMCA defines a *turn* as an atomic utterance of a participant, we define it as a physical action, a minimal set of gestures, including moving, holding pointing at or writing on a sheet of paper. To give the reader access to the observations, we provide a set of pictures, each of which represents an atomic practice. The simplistic nature of the bird's eye view sketches enhances the focus on the interaction's paper-based choreography. We explain the depicted interaction and refer to some relevant comments from the interviews. The orange elements represent movement of the paper across the table; the movement direction is indicated by an arrow. The short dialogues on grey background constitute a rolling example that illustrates the described practices and are a combination of fieldwork notes and passages from the supporting data. Codes in square brackets (e.g. [STH]) point to specific advisors and let the reader understand whether quotes belong to the same person or a different person. Overall, the results form a comprehensive description of a financial advisory encounter from start to finish. Thus, the reader gets easy access to the results, which allows for individual interpretation.

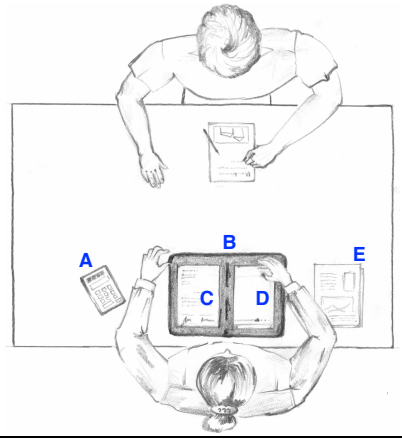
4.1 Practice: Organising

We join the participants at the start of the advisory encounter. The advisor and the client shake hands and enter the room, the advisor behind the client. The room is empty except for a table with chairs around it. On the table, there is a black leather file folder; the advisor put it there just before the session. The client takes the other seat, opposite the one with the black leather folder. They start with small talk while the client takes some files and puts them in front of him and the advisor opens the folder and puts her calculator on the left and a portion of the documents on the right. They continue their small talk.

Illustration	Example

Unfolding the interaction space

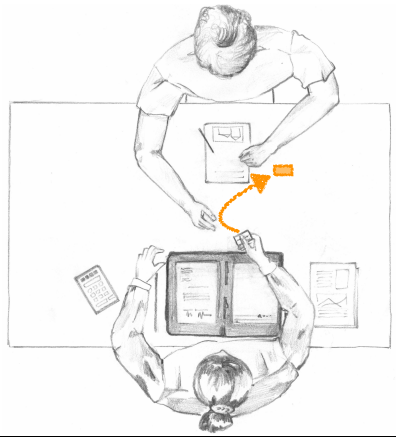
At the start of the advisory encounter, the advisor organises her side of the table: she distributes the documents and the calculator along her side of the table. Importantly, as explained by an advisor, the piles of paper are not randomly ordered or put together: "It is necessary to know what is in each pile so as to look confident and professional. The order reflects my plan for the encounter" [STH]. The calculator (A) goes from the leather folder (B) to one side, a pile of bank documents (E) to the other side, a pile of the client's documents (e.g. the email with the appointment or account data) (C) remains in the folder next to the pen and the pile of blank sheets of paper (D). The advisor's papers take up a third of the table. The space between the client's documents and the space reserved by the advisor remain empty.



A: Hello. Welcome to MoBa, Mr. Butterfly. I know you were talking to Ms. Ladybird some months ago. She is on maternal leave, and I will substitute for her. I hope you're okay with this.
C: No problem.
A briefly looks at his notes on the left (C).
A: And, yes, in your email, you said that you inherited a house from your father few months ago.
C: Exactly, yes, well…
A: Thank you very much for all the material you've sent me per email. (…)

Presenting oneself

Often, the first activity that participants engage in at the table is a short presentation. The advisor offers her business card, printed in accordance with MoBa's corporate design. While the advisor omits this procedure since she and the client already know each other, most advisors consider giving a business card to new clients to be very important: "It shows to the client who I am" [SUH]. The client takes the card and positions it at his convenience on the table – we observed that the client looked at the card during the session to remind himself of the advisor's name. In parallel to handing over the card, the advisor talks about her background and experience with the topic under consideration. She also says what she is doing: "I will now give you my business card." [SUH, PAB].



A: Allow me to introduce myself. My name is Carolin Hummingbird. I have been working here for four years now. Before this, I spent several years at AbeBank. I have always worked with hypothecary loans. Feel free to contact me with any questions regarding your intentions.
A takes a card from her folder and gives it to C.
C: Thank you.
C takes the card from A, looks at the card for a moment, and then places it on his side of the table.

Receiving the client's presentation

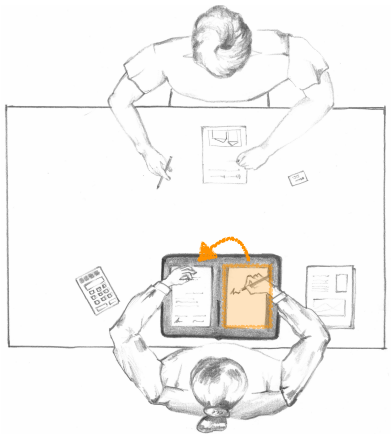
Like the advisor, the client also delivers some basic information about himself and the transaction he intends to make. This happens after a question or other verbal encouragement from the advisor; in parallel, she takes a pen and moves it towards the pile of blank papers, indicating her intention to take notes. She lets the client tell his story and, where necessary, supports it with questions, while taking notes. When the client has finished his story and the advisor has enough data to proceed, she puts the paper with her notes in front of her – in this case, on the client's documents pile on the left in the leather folder. This concludes the initial phase of the advisory encounter.	
	A: Please tell me more about the renovations you want to do and about the house. You said, it was your father's house? *A looks at the client while taking the pen and slowly putting it to paper.* C: Well, umm, not exactly. He bought the house and let it, as two separate flats. We renovated it together maybe ten years ago. *C looks through his documents.* C: Exactly. It's from 1960 but we renovated it in 2004 and divided it into two flats for rent. We worked there together, which is why I want to keep it so badly. But it needs renovation and I want to move into the place with my wife. *C puts the documents back flat on the table, A makes her notes. A + C continue to talk about the house. A takes notes while occasionally looking at C.*

Table I. Paper practices involved in the organisation of paper artefacts and the initial information collection

Table I lists set central practices participants engage in during the opening of the financial advisory encounter. It points to some interesting facts: The advisor normally prepares a set of documents before the advisory session and then, directly at the outset, she reconstructs the order of the documents by positioning them across her side of the table. "The order of things is really important to me and it's good when clients see it" [STH], one advisor said, admitting that the impression he makes is a "part of the assignment" [STH]. Documents regarding the client (e.g. transactions on his account or the relevant correspondence) are separate from these documents, including information concerning the bank (e.g. a catalogue of current mortgage products and rates, predictions or suggestions published on the bank's intranet). The empty sheets of paper used for taking notes are positioned so as to allow for quick access to them. The positioning of the paper piles demarcates various areas of the table: the advisor's space, the client's space and the space in the middle. Interestingly, the advisor enters the space first while handing over their business card.

4.2 Practice: Exchanging

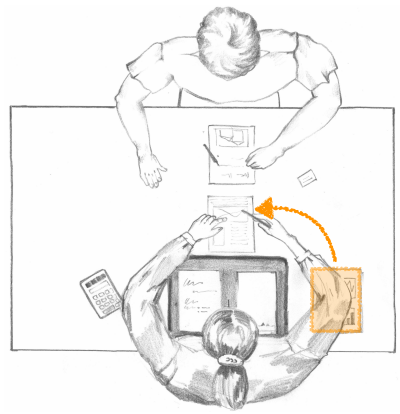
We join the participants after the initial exchange of general information, at a moment when there is concrete information transfer. The client learns about the bank's products and the advisor learns about the client's expectations. She needs to collect

specific and if possible objectively confirmed information about the property and the client's financial situation to assess the transaction's potential. We observed that paper documents are extensively used for information exchange, even though some information is easy to transfer without the use of documents (e.g. the bank's basic interest are three different figures). Importantly, the practices in Table II occur in varying configurations: while sometimes advisors explain the bank's offering before collecting the property information, others conduct these activities in the opposite order. In our observations, the configuration depends on how much information the client has provided earlier.

Illustration	Example

Providing information

To provide a general explanation of the bank's mortgage offerings, the advisor uses a set of prepared documents, including stable depictions and information (e.g. repayment models, mortgage structure or current interest rates) and dynamic content adjusted to the client (e.g. calculations of the desired loan's affordability). Advisors often adjust the bank's printouts to fit the client situation and annotate it with additional information, even though the material is not explicitly designed as a form. Thereby, they not only change the content but also the visual design of a given sheet of paper. Importantly, whenever documents are placed in the middle, the advisor turns them to face the client and she explains them while viewing them upside down. It is only when she is not very familiar with a document or writes down something that she briefly turns it.



A: You see, we as the bank need to ensure that your property provides enough coverage for the mortgage. It means, the difference between what you possess…

A takes the top sheet of paper from the pile on her right and rotates it towards the client. She circles the word Kaufpreis *(purchase price), rotates the sheet back to her and writes* 900 000 *next to it.*
A then points to the 900 000.

A: … and the size of the mortgage…

A circles the word Hypothek *(hypothecary credit).*

A: … is at least 35 percent of the property.

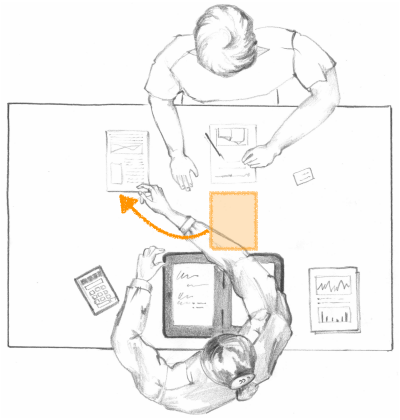
A draws an arrow between Kaufpreis *and* Hypothek *and writes* 35% *next to it, takes a short break while still looking at the paper, and then writes* 315 000.

A: In your case, it would be a bit more than three hundred and fifteen thousand francs. In your case, the difference would be even higher – four hundred thousand francs.

A and C continue to calculate the mortgage's affordability and other factors that would ensure that C could get a loan from the bank.

Handing over the information

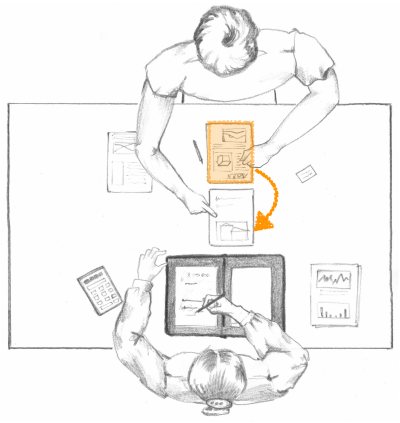
Often, after explaining the values or concepts under consideration, the advisor hands the document to the client. As some advisors put it in the interviews: "it is important that the client has something relevant to take home" [RUO, PAW]. Sometimes, the advisor places the document directly in the client's space. When asked for the reason for this behaviour, an advisor explains: "I noticed that this is the right place to put the documents. I helped her, I think. I don't think it made a negative impression on her. Hopefully, I made a positive impression" [SUH].



A: Okay, so, looking at the data, I am fairly sure that you can afford a mortgage on this property.
A looks at C, A and C lean back for a moment and look at each other.
C: Well, I'm happy to hear that.
A: We still need to clarify a few things, right? Let me take this away.
A laughs, take the document from the middle of the table, and places it next to the client's hand.

Receiving information

The client also has documents to share with the advisor – he has information on the property, including the number of rooms, bathrooms, location and year of construction, i.e. information that is relevant for assessing the property as an investment. When the advisor asks for this kind of data, the client may use an official document or a prepared printout. Normally, the advisee puts it in the middle or keeps it in his hand, holding the paper slightly above the table, so that the advisor can see it. Eventually, the advisor takes the sheet of paper and positions it at her convenience. In most cases, the document is returned to the clients, except if it's an official paper, then the advisor may photocopy it to include it in the case documentation.



A: The bank assesses a property's value before granting a loan. We use a database for this. You have already told me much about the house, but could you also give me some data about the land?
C takes a document from the pile in front of him, rotates it towards A, and points at the section with information on the parcel.
A bends over to read the information presented to her and occasionally looks at C.
C: The land is about half an acre, including a part we shared with the neighbour for the road. This part is about 10 meters long and 2 meters wide.
A sits op straight and completes her notes. She returns to the document presented by C to compare information from her notes.

Table II. Document-oriented practices emerging during information exchange between the advisor and the client during a financial advisory encounter

Table II presents a set of practices that support information exchange between the advisor and the client. The observations point to the middle of the table as the space for interaction and transaction. However, in specific situations, the advisor reaches out beyond this common space and operates in the part of the table that is right in front of the client, and clients show no signs of distrust owing to such behaviour. The client never interacts beyond the middle of the table. Also, when positioning a paper in the middle of the table, he sometimes holds it until the advisor takes the initiative. Both parties have relevant information to be provided and requested (e.g. advisor: interest rates and mortgage system; client: information about the property).

The client and the advisor act confidently concerning verbal communication and the content of this exchange. However, interestingly, in the use of paper documents, the client's behaviour (unlike the advisor's behaviour) exhibits signs of reservation.

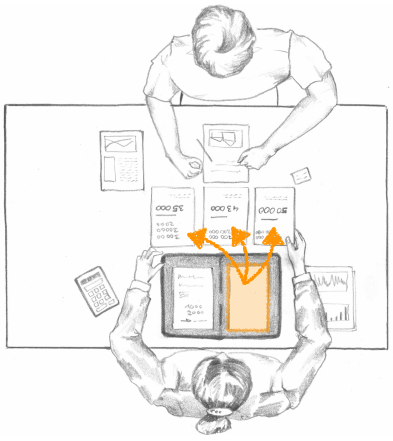
4.3 Practice: Offering choice

We join the participants after the advisor has prepared a set of specific, client-tailored options for a mortgage. It may be a single option, but often the advisors, driven by client's questions, incorporate specific information into additional calculations. After collecting all the necessary information, the advisor uses her empty sheets of paper and the calculator to calculate several different options regarding loan duration or interest rate type (flexible vs. fixed). While calculating the options, the advisor occasionally talks to the client to elicit his needs and adjusts her calculations accordingly; however, there are a few long, unfilled pauses, where the advisor uses the calculator and notes down the calculations. After the first calculation, she consults with the client to collect information that influences the second calculation, and so on. Each option is clearly separate from the others – the advisor notes each of them on a separate sheet of paper.

Illustration	Example

Parallelising options

Having prepared the various options, each on a separate sheet, the advisor places them on the table. Importantly, the sheets are positioned such that corresponding positions are (horizontal) next to each other and can be taken in at once. In the interviews, advisors report that they wanted to provide an overview of the options. The advisors stressed the fact that this practice is essential in situations in which a new mortgage replaces an old contract: "There, you can show what will be different in the future and what may change owing to changes in the market and in interest rates. You can show that you care and that the bank cares" [STH].



A: Let's start with the straightforward things: you can take a fixed rate for the whole mortgage – you benefit from the currently low rates for the next ten years (…) In this case, you would pay exactly one thousand and twenty francs per month, which includes the interests but no amortisation.

A places the first sheet in the middle of the table; with her finger, she points at 1020 p.m. *written at the bottom.*

A: However, if you want to pay back your mortgage within the next few years, as you suggested, variable rate may be a better option. (…) We would charge you one thousand two hundred per month in the first three months, but the interests may vary. (…)

A presents the second page to C; with her finger, she points to the word Variabel *(variable) and makes a wave gesture, at the end she points at* 1200 *written at the bottom.*

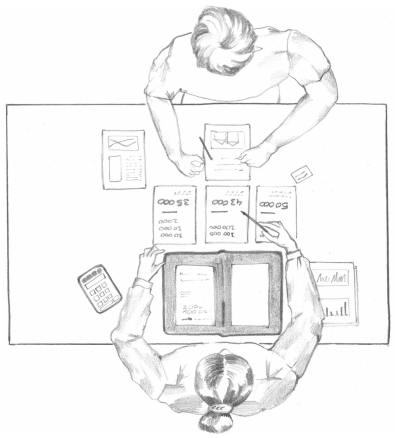
A: And here we have the mix of the two. It's three hundred thousand in fixed mortgage and two hundred thousend variable. (…) This would be

something like one thousand one hundred per month.

A presents the third page to C and points to 1120 *at the bottom.*

Comparing options

After positioning the alternatives on three separate sheets in the middle of the table, the advisor compares the figures and calculations across the alternatives. The interaction relies on finger and pen gestures. Some advisors use a highlighter or simple drawings (e.g. arrows up or down) to highlight key differences and assess them. The advisor works through the presented content across the various sheets, i.e. in a horizontal direction. In other words, she uses the structure she established in the previous step. When pointing to and talking about the offerings, the client and the advisor often simply refer to the paper as if the hand-written calculations were the offering.



A: (…) In this option, you pay the lowest monthly rate, but it will remain steady for the next ten years, and here you would have variable rate, which may fluctuate but should become lower as you pay (…)

A points at the rates at the bottom of pages 1 and 2, A looks at C, C looks briefly at A and follows her pen on the pages. C looks up at A whenever she moves her pen.

C: But, I can also pay back in here too, can't I?

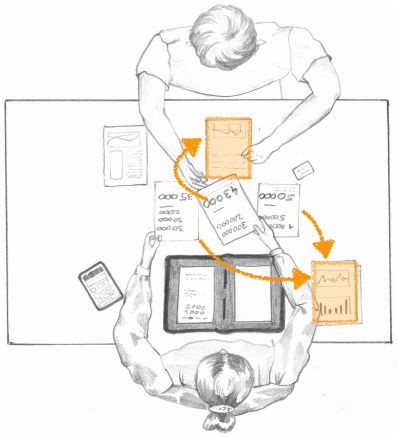
C points at page three and raises his head. C looks at A. A moves her pen to page three.

A: Yes, sure, but three hundred thousand is fixed for the next five years, and after those five years, you either pay back everything or you prolong the mortgage with the rates as at 2021.

A points her pen at 300 000*, circles it and draws an almost invisible line to* 5 Jahre *(five years).*

Choosing an option

Having discussed the differences and similarities across the options, the advisor and the client move to the overall assessment of the options at hand. The client often requests more time for further considerations. The client retains the sheets of paper with the most appealing options. The advisor picks them up from the table and hands them to the client. She then picks up the remaining sheets with her calculations and keeps them – on the document pile on her side of the table.



C: Can I take this home to talk it through with my wife?

C points at the middle page and almost lifts it from the table. A takes the same page from her side and gives it to the client.

A: Sure. Do you want the others too?

C: No, thanks. I think this could be the optimal one for us.

A collects the other pages and puts them to her right. C adds his chosen page to his documents.

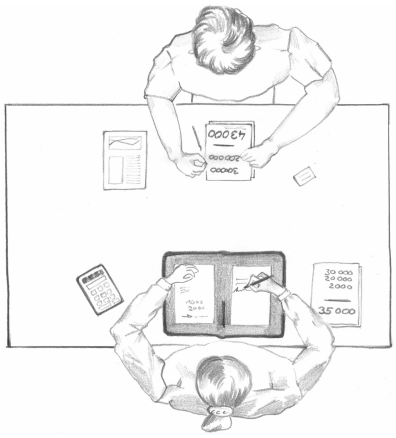
Table III. Paper micro-practices that emerged during the presentation and the comparison of alternatives

Table III lists practices that emerged when the advisor and the client compared the various offerings. The sheets of paper are situated next to each other and compared to each other; this plays a key role. Each sheet refers to a specific offering – in this form, each symbolises an abstract concept, an offering, and they "mean this offering" [PAW]. Importantly, it is the advisor who organises the sheets of paper around the table, moves and marks them. The client limits himself to referring to the sheet of paper or figures. Overall, the choreography of the presentation of the options is built around the hand-written sheets with calculations on them, which in the conversation stand for the de facto offering. An advisor said: "I want the client to know that he gets the offering that suits his situation" [STH]; this impression should result from the comparison of various options.

4.4 Practice: Closing

We join the participants towards the end of the encounter. This may be signalled by a statement such as "If you have no further questions, I will prepare a definite offer for you and will email it to you" or "Feel free to call me as soon as you have slept on it." In all cases, the intention to work towards the end of the session was signalled verbally and acknowledged by both parties, usually several times. At this point, the advisor's interest is to remember all concessions and individual conditions she has made to the client while retaining the impression she established throughout the advisory encounter. After the encounter, the advisor prepares a set of documents on her desktop to be sent via internal mail to the department responsible for acceptance. She will also compose a short report on the service she provided. Thus, the closing part of the encounter is the last time she can check the completeness of her notes and can supplement them.

Illustration	Example
	Finalising notes
	Having initiated the closure of the encounter, the advisor summarises. She reiterates the key points of the offering and her understanding of the next steps, and makes notes on the offering and the subsequent contact. In some cases, she summarises the situation based on her notes and expects a brief confirmation from the client. The advisor also annotates or highlights the collected *to do* list, "so it is easy to see what must be done" [STH]. The client co-engages in the finalisation of notes – he often goes beyond simply confirming the information and stresses specific facts from the conversation.

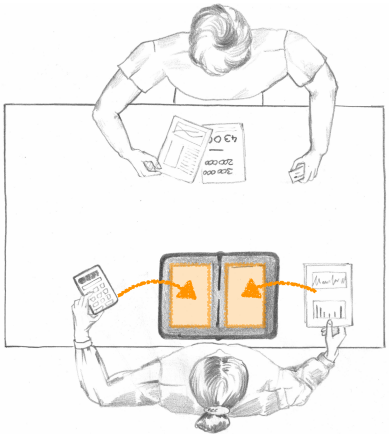


A: I will send you a message with all the information, and it will be clearly written (*A laughs*) by this evening. Should I call you on Monday to discuss the offering?
C: Yes, please. Monday, around 6 p.m. will be fine. I will have spoken to my wife by then.

A make notes on the sheets of paper in her folder: A writes Mo, 6 *and some information regarding the offer she made to the client, including the figures* 300 000 *and* 200 000. *She draws a line below her notes from left to right. C looks at A, then at her notes, and then at the offer in front of him.*

Folding the interaction space

Having collected and noted all the necessary information, the advisor puts down her pen and gives further non-verbal signs of completion. The client and the advisor organise their documents into a single pile. The advisor puts the documents and the produced notes into her folder, while the client stacks them. They both order the documents if necessary – advisors tend to put irrelevant pieces of paper at the bottom and the most relevant at the top; sometimes they turn the page in the process of organising the papers. The space occupied by each participant shrinks within moments.



A: Do you have any further questions? Anything I can do for you?
C: No, thank you. I think I've asked everything I wanted to ask. And you'll call me next week, right?

C puts together the documents on his side of the table. A sorts the papers in her folder: client data on the left, prepared printouts on the right, calculator on top of them, her pen in the middle. She closes the folder and leaves it on the table. A looks at C and nods.

Closing the interaction

While the advisor's leather folder remains on the table, next to the advisor, the client collects his papers and picks them up from the table. If the client does not have a folder with him, he takes the documents, lifts them and tries to form a consistent pile – in this situation, the advisor offers him a MoBa-branded folder. Having collected his documents, the client takes his leave.

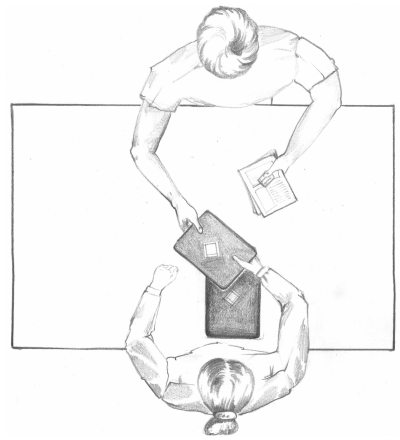
	A: Yes, I'll call you. And don't hesitate to contact me if anything comes to mind… You have my card, not so? *A looks at the documents C lifts from the table. C also looks at them. The business card is visible at the top. C nods.* C: Yes, I have it here. A: Wait, I'll give you a folder. *A turns around, takes a folder from the shelf and gives it to C half open, so that he can open it easily and put his documents in the folder. A retains eye contact with C. C nods.* C: Great. Thank you… *A and C make small talk, later say goodbye and leave the room together. A returns a few moments later and picks up her leather folder.*

Table IV. Paper practices observed in the closing phase of the financial advisory encounter

Table IV summarises the practices that emerge towards the end of the encounter. After finalising the notes, the participants literally fold up their interaction spaces. When the work artefacts disappear, the working character of the encounter lowers and the tone changes: more small talk and courtesies fill the conversation. An advisor explains: "I want to satisfy the client as much as I want to satisfy the bank. (…) Knowing that I can close my folder, seeing that the client leaves the encounter satisfied and relaxed, knowing they can buy their new house, is what I strive for" [STH]. Another said: "At the end of the encounter, you know whether you made the impression you sought to make" [SUH]. The relaxed atmosphere visibly emerges in parallel to packing up and putting away the documents.

After returning to her office, the advisor engaged in the post-processing of the case: she sorts out the irrelevant notes and calculations, put the relevant ones in the sleeve reserved for this contract, writes a report in the banking software system, including key data about the client and the mortgage advised on. If she has no imminent appointments, she fills out the set of forms the bank needs to process the case. Otherwise, she puts the sleeve on a pile of other sleeves – cases to be processed.

5 Discussion

5.1 Paper practices and institutional talk

The results present a set of paper practices we observed across a range of financial advisory service sessions. As noted, an advisory encounter unfolds around the documents and papers used therein, even though these practices occur to the advisors as natural and implicit. The advisors' statements illustrate how they embody the practices and see them as integral to their daily advisory conduct. The movement and positioning of paper on a table resembles the typical activities of an advisory

encounter, i.e. information collection, information provision and recommendation (Verhallen et al., 1997; Jungermann, 1999; Jungermann and Fischer, 2005; Moulton, 2011; Bradbury et al., 2014). When the advisor moves a sheet of paper towards the middle of the table, this action is information provision. When the advisor studies a paper-based document provided by the client, this action is information collection. Finally, when the advisor presents a set of paper documents on options, the advisor's activity is about comparing and offering choice (i.e. recommendation). While studies have identified the set of general activities and have formalised them into phases of financial service encounters (Oehler and Kohlert, 2009), we go one step further, arguing that these activities are paper practices, i.e. embodied sets of micro-behaviours oriented towards paper artefacts.

We point to the dependency of institutional encounters on the material, including paper documents. While previous research stresses institutional talk's dependency on scenarios, contexts, constraints and institutional identities (Drew and Heritage, 1992; Heritage, 2005), we show how an encounter's institutional character is reflected by the material conduct. The actions done with and to paper illustrate the participants' roles and the relationship between them: the advisor introduces phases of the service and addresses knowledge differences by placing specific documents on the table, moving them and emphasising specific information thereon. Statements from the interviews confirm how the understanding of their roles (e.g. satisfying the client and the bank) relate to the material conduct (e.g. closing a folder or placing a sheet of paper on the client's side). While there are types of institutional talk in which no interactional artefacts are used (e.g. telephone calls), most examples of institutional talk in a face-to-face setting have a strong material element in the interaction: doctors and therapists hand over prescriptions, use tools to make prescriptions and take notes (Peräkylä, 1993; Peräkylä, 1995; Skelton and Hobbs, 1999; Couture, 2006; Pearce et al., 2008; Pearce et al., 2009), police interrogations are clearly oriented to creating an artefact (e.g. a report) (Atkinson and Drew, 1979; Adelswärd et al., 1987), sellers and buyers exchange products and money (Clark and Pinch, 1986; Darr and Pinch, 2013), and educational settings extensively use text documents to structure interactions (Svinhufvud and Vehviläinen, 2013; Hazel and Mortensen, 2014; Mondada and Svinhufvud, 2016; Svinhufvud, 2016). We extend this catalogue of findings while presenting how paper is used to structure interactions during financial advisory encounters – another type of institutional talk. Given the evidence for a prominent role of material in service encounters, we conclude that the definition of institutional talk should be extended to acknowledge the key roles of various artefacts, including paper documents.

The ways paper is used in financial service encounters resemble the distribution of conversation rights; verbal dominance of one participant in an institutional encounter is seen as their key characteristic (Adelswärd et al., 1987; Itakura, 2001): the provider controls, among others, time and turn allocation, i.e. the distribution of conversational resources. Similarly, as our results suggest, the provider controls

the distribution of resources relating to manipulation and use of objects in the interaction: not only does the advisor control the middle of the table, i.e. in the shared interaction space, but she also reached into the client's space and placed documents there, as in case of *handing over information*. In other words, she controlled the space allocation in the shared space and granted access thereto. Studies of paper's use in education counselling point to the manipulation of paper documents as an interactional resource that helps to chronologically structure an interaction (Svinhufvud and Vehviläinen, 2013; Hazel and Mortensen, 2014). The results show that the ways paper and material are used during a financial encounter may also emphasise the asymmetry between the participants: asymmetry in interactional rights is reflected by the control of the interaction space and knowledge asymmetry is reflected by the transfer of documents. We shed light on paper's use in institutional talk: manipulation and maintenance of paper documents helps to structure an interaction, as discussed, but also mirrors and reinforces the institutional identities and the asymmetry between them.

Previous research saw the institutional setting as a form of theatre, with its own dramaturgy (Darr and Pinch, 2013). While this metaphor may hold in some contexts (Clark and Pinch, 1986; Pinch and Clark, 1986; Darr and Pinch, 2013; Wooffitt et al., 2013), we propose two further metaphors: a *card game* and *dishing up at a restaurant*. As in a card game, each participant in the financial service encounter starts with his or her hand, and they play their hands in accordance with the institutional rules and their roles, i.e. they place their cards in the middle of the table, forming a board (also called the 'window' in poker). The advisor has the role of the dealer and a player, while the client only plays in some rounds. Nonetheless, a card game differs from advisory service: A card game finishes with a win or lose for one player, which don't directly apply to the financial service encounter – being a type of collaborative problem-solving, the interlocutors don't play against each other but with each other (Dolata and Schwabe, 2017). The financial advisor and the advisee don't play blackjack, but are rather involved in jointly solving a game of solitaire or playing split. The card game metaphor explicitly addresses the visible choreography of paper practices rather than the deep reasoning behind it: if we consider the *information provision* or *the choosing of an option*, a sheet of paper not only changes places and owners, but moves from a hand to the board and then to the pile of inactive cards. When designing financial advisory encounters, it is important to acknowledge the fact that sheets of paper may have different meanings depending on their position, as in a card game. Thus, this metaphor is a valuable frame for understanding and presenting the statuses of different sheets of paper: the active cards form the board, the ones to be played soon are in a hand, and the inactive ones remain in a pile. Similarly, the interlocutors are focused on the board, control their hand to know what else there is to talk about, and pay attention to the pile only upon request.

While the card game metaphor provides a view of the choreography of papers in the financial advisory encounter, the *restaurant dishing up* metaphor explains its choreography, especially during *organising* and *folding*. A visit to a fancy restaurant starts with seating the guests and offering them the menu; the waitron then offers beverages, supports clients to choose from the menu – involving a sequence of collecting a clients' wishes, suggestions and recommendations, as well as arranging the crockery on the table. The course of events and the composition of the ingredients on the plate are planned. The more exclusive the restaurant, the higher this ceremony's value: the clients should not just enjoy their meal but the entire experience. Based on an advisor's statements and actions, which stress the desire to satisfy the client and show the organisation of the interaction space as an anticipating behaviour, we claim that advisors take the role of a servant when engaging in a well-coordinated choreography throughout an encounter. The metaphor goes even further: while the performance is primarily oriented at taking care of the client and their needs, the advisor and the waitron both depend on a successful transaction: the waitron may hope for a great tip and the advisor for additional income (depending on the bank's policy) or, at least, appreciation from her superiors or colleagues. Thus, advisors are motivated to engage in practices that positively impress every client.

The card game and restaurant metaphors can support the design of interactive systems for financial service encounters and similar institutional settings. Thanks to its tangible character, the card metaphor can be more directly applied in the design of such systems than a dramaturgical or theatrical notion of such an encounter. Thanks to its experiential character, the restaurant metaphor provides a better sense of elegant, coordinated interaction between a client and an advisor. We claim that blending these two metaphors will lead to a better understanding of what things mean in a financial advisory encounter and what will better guide the design of appropriate IT.

5.2 The semiotics of paper in practice

Our results illustrate how the various practices in a financial advisory encounter rely on a relatively small set of paper's physical affordances. Thanks to the identity of content and presentation and, thus, the high predictability of paper (Gaver, 1996), both parties can easily assess the state of the other side and can assess how much is left to discuss. The same paper quality allows one to build an ad hoc structure, as in the parallelising practices, by simply putting sheets of paper next to each other (Gaver, 1996). Even though single documents have a linear character, paper as a medium affords re-ordering and the creation of a multidimensional picture, as in *parallelising* and *comparing options*. All these possibilities relate to paper's physical features: it affords effortless moving and holding above a table (Sellen and

Harper, 2002); in combination with a pen, it enables scribbling, writing and marking, to even further support practices involved in comparing or exchange (Sellen and Harper, 2002). A financial advisory encounter leverages many but not all affordances of paper: For instance, neither an advisor nor a client folds a sheet of paper or tears it up. And only in very few cases do they deviate from the linear structure of a paper document (top-down, left-to-right). Thus, they use the flexibility of paper concerning input and physicality (Gaver, 1996) only to a low extend. This exemplifies how, in accordance with recent changes in ecological psychology (Charles, 2011; Leonardi, 2011; Overdijk et al., 2012; Fayard and Weeks, 2014), the context-free consideration of affordances may differ from de facto uses. As the results show, it is not the routines' overwhelming flexibility that escapes the limits of affordance theory. Instead, the practices are arranged in accordance with the character and goals of an encounter, and some actions could simply destroy the intended impression: tearing up paper could indicate that the documents on the table are not important; going beyond the boundaries of a sheet of paper could dissolve the impression of a perfect and enclosed service, etc. In other words, the choice of paper's available affordances in financial service encounters are limited by the meanings of paper in this interaction as something that provides the structure, persistency and shared view of the information.

The meanings (i.e. the semiotics) of paper vary across a single encounter. The identified practices provide a lens to abstract from particular occurrences and, through intersection with other practices, explain the meanings of a sheet of paper in an episode (Scollon, 2001; Weilenmann and Lymer, 2014). Our study shows that paper stands for concepts and elements that are central to an encounter: Paper stands for an offering when it is placed on a table along with other documents. Paper stands for a house when it includes an advertisement of it and is presented for information exchange. Finally, a file or folder with a set of papers stands for a specific case that must be processed. Also, each of the documents that enter the interaction have meanings attached to it: The advisor reviews and prepares all her documents in advance. When a document comes from a client, the advisor will treat it as a data source and will collect information. In other words, the advisor will attach a meaning to this sheet of paper and will process it accordingly. The ways financial advisors interact with documents are not driven by the documents, as suggested by the studies on the uses of forms and documents in institutional settings (Berg, 1996; Heath and Luff, 1996; Moore et al., 2010). The uses of papers that may enforce specific behaviours in financial service encounters (e.g. forms or guides) are very limited. In turn, the advisor is the one who organises the papers in a way that affords a specific way to collaborate. Thus, she projects her own behaviour on the documents and influences the client's behaviour. Bringing about a specific client behaviour has been presented as a practice specific to selling encounters (Clark and Pinch, 1986; Pinch and Clark, 1986). We argue that the occurrence of

such practices in financial advisory encounters relates to their commercial character, in contrast to non-commercial institutional settings, which rely on the explicit communication of expectations (Svinhufvud and Vehviläinen, 2013) or persuasion (Dolata et al., 2016).

Interestingly, the advisor operates mostly with the form, the movement and the placing of the paper. She guides the steps of the encounter by moving sheets of paper to the middle of the table, closes a topic by putting them on a pile of papers, and changes the topic by pointing at specific areas on sheets of paper. In other words, the practices related to the overall structuring of an encounter depend on the material nature of paper (Mikkola and Lehtinen, 2014; Weilenmann and Lymer, 2014) rather than its textual nature. The advisor attends to a document's content when she collects the information or makes general notes. However, both participants are involved with the content, most prominently when the advisor calculates the alternative offerings and refers to them when comparing the alternatives. When moving horizontally and vertically across the three alternatives, she keeps changing the focus every time she points at a place on a sheet of paper. However, this horizontal and vertical moving is only possible owing to the specific placing of sheets of paper on a table. Thus, the practices involved in offering choice exist at the intersection of the material and the textual nature of paper. In other words, the meaning of the paper in, for instance, parallelising, results from paper's material nature in combination with its content.

When addressing the tension between paper's affordances and paper practices, one must consider their inherent dependence (Schmidt, 2011; Wulf et al., 2011; Shove et al., 2012): changing affordances will change practices, and changing practices may result in a demand for artefacts with specific affordances. In financial advisory encounters, we observed how specific affordances are reflected in practices, which – in turn – are subordinate to the encounter's overall character and its implicit goal: impressing the client. Replacing existing affordances of paper, for instance, by turning it into a form, will necessarily transform the practices, and will eventually make them incompatible with an encounter's goals and with other practices, such as conversational practices (advisors often use specific phrases that need to be adapted to new circumstances). However, if new affordances stepwise extend existing ones, one may expect a calm and long-term transformation of practices. Consequently, we claim that suitable support for financial advice will preserve existing practices and will extend existing affordances.

5.3 IT design for paper practices

Our study results point to practices that leverage the material and textual natures of paper to impress a client. They also make clear how paper changes its semiotics: a sheet of paper in the middle of the table along with other similar sheets means an option; a single sheet of paper moved to the middle of the table means the provision

of a fact; a single sheet of paper on a pile means an activity to be done or that has been done. Finally, our results show how the practices relate to the institutional identities of the interaction partners: the advisor, who has more interactional rights owing to her position, actively operates in the larger space on the table, reaching well into the client's space; the client, who has fewer rights, remains passive and operates only if requested to do so, in their area, up to the middle of the table. Overall, paper is not a part of an advisory encounter only owing to the missing alternatives, but because it affords subtle practices that go beyond those postulated in the literature: information collection, information provision and recommendation (Jungermann, 1999; Jungermann and Fischer, 2005; Oehler and Kohlert, 2009). Thus, unsurprisingly, the prototypes and proposed solutions that use such models (Nussbaumer et al., 2012; Heinrich et al., 2014a; Kilic et al., 2015; Kilic et al., 2016) have a hard time finding their way into financial advisors' daily practices (Schwabe and Nussbaumer, 2009; Heyman and Artman, 2015; Kilic et al., 2016). This insight urges us to question the available technological solutions and their potentials for practical use in financial advisory encounters.

A desktop computer with or without touch input may seem a natural choice for supporting advisory encounters. Desktops are well spread across institutional settings, the setup and training costs are low, and users can adapt easily based on their experience. Thus, advisory rooms are often equipped with a desktop PC, which can be used during advice-giving, for instance for quick calculations or information collection (Pearce et al., 2008; Pearce et al., 2009; Giesbrecht et al., 2013). However, such systems do not support *paper practices*. For instance, *parallelising* is limited by screen size and requires additional adjustments. But there is more to it than this: First, the interaction space in such a scenario is limited to the desktop PC's screen, and there is no possibility for the client to access it other than through the advisor (Arvola, 2004); the advisor not only dominates the interaction space, but fully controls it and is the only one with access to it; however, the overall space is much smaller – this destroys the typical power equilibrium of institutional talk. Second, the semiotics of objects differs from paper: while an empty sheet of paper in a financial advisory encounter acquires its meaning through interaction and positioning, the semiotics of elements on a desktop depend mostly on their graphical design. Third, the production of a desired impression will necessary relate to the design of the software running on the desktop; while in the paper-based advisory encounter, the advisor may use simple means (e.g. ordering papers) to convey the impression of order and control, this may be difficult in a fuzzy and messy design. Thus, the desktop PC and its screen, solely owing to its size and input possibilities, are no match for paper.

Tablet PCs in various forms and sizes are flooding the market and have led to design efforts in many areas relating to advisory encounters (Pyykkönen et al., 2013). Some financial institutions have equipped their advisors with tablets to support their advisory encounters and use them as assets in their marketing (Maetje,

2014). Based on our observations, this may be problematic – while mobile devices are appropriate for mobile advisory settings (Giesbrecht et al., 2015; Comes and Schwabe, 2016), they have drawbacks in a stationary, table scenario. If one envisions a tablet as a standalone support system for the advisory encounter, it will probably replicate many of the desktop PC's issues, including limited interaction space and the access issue. Nonetheless, tablets offer an improvement compared to the standard desktop PC: one can easily reposition a tablet, hand it to an interaction partner, or rotate it when necessarily. However, this is not enough: First, getting an overview with a tablet is problematic, be it during *parallelising* and *comparing the options* as well as concerning representing a pile of papers. Further, the input options for tablets, despite recent improvements, remain limited: virtual keyboards take simply too much space on the display, and the stylus solutions have tangible feedback and responsivity issues. Second, a tablet's semiotics doesn't remain stable: as soon as the content on the screen changes, pointing at the tablet and saying "this" will result in confusion. Third, impressing a client through the choreography of a single movable device may be easier than in the case of a desktop PC, but harder compared to paper-based choreography. In summary, while tablets are an improvement over desktop PCs, they lack the natural features of paper and are still simply too bulky and too expensive to directly replace paper – the vision of using many tablets in parallel, like sheets of paper, goes beyond what is doable today. Still, tablets may dominate the stage owing to the aforementioned regulatory requirements and their popularity in mobile scenarios (Maetje, 2014; Giesbrecht et al., 2015). Thus, transferring paper practices to tablets may turn out to be the next challenge in financial service encounter design.

If the table is such an important element in the advisory encounter, why should it not become an interactive space? Existing solutions point to the potential of well-designed support systems for advisory encounters using Surface table-top devices (Nussbaumer et al., 2012; Heinrich et al., 2014b; Heinrich et al., 2014a). Tabletops provide a digital, touch-sensitive space that can be easily turned into an interaction space; widgets or virtual sheets of paper can be moved around and rotated in a 2-D plane of a size comparable to a table; with appropriate design, they can be placed parallel to each other in the middle of the space; also, the client area and the advisor area can be identified. Thus, the power equilibrium bound to the access rights to the interaction space might remain stable. Seemingly, many of the identified practices can be supported by such a tool, but why do we not encounter them in financial advisory practices? As the research shows, some clients tend to exhibit very passive behaviour when the advisor interacts with a computer rather than paper (Kilic et al., 2016). Also, problems may occur if one of the parties starts taking notes – the resolution and sensitivity of the tablets available on the market are below the parameters needed for a seamless writing experience – replacing natural input with a keyboard limits the access to the interaction space, as in the case of a

desktop PC. Also, *handing over information* and *receiving information* from a client's document will generate a media break. Second, while the semiotics of an element on the table, under the assumption of good design, will possibly remain clear, the semiotics of a pile of papers and the tacit information related to the tangible thickness of such a pile will disappear. Third, the impressions resulting from the choreography of movement and gestures will be limited by a system's design and by the 2-D interaction space; while holding a sheet above the table may be considered an extension of a movement, developing *extension gestures* and the semantics behind them for table-tops have not yet been considered. While the use of interactive table-tops generally allows for the thorough redefinition of existing practices and seems to offer a promising solution, limitations in dimensionality, sensitivity and resolution point to a set of challenges that must to be considered.

Recent developments regarding augmenting paper with digital technologies open further possibilities for the design of support systems for advisory encounters (Luff et al., 2007; De Sá et al., 2009; Luff et al., 2009; Butscher et al., 2013; Meredith, 2015; Butt and Navarro, 2016). When discussing the potential of such a system to support paper practices, we envision a system consisting of an 8K UHD overhead projector illuminating a table and connected to a computer. The computer receives information from a motion-sensitive camera and a digital pen to interpret the following input types: the positions of various sheets of paper, their movement, hand-based gestures and handwriting. We argue that such a system has the potential to support the practices listed above, but requires additional semantics to interpret the ongoing actions: First, with such a system, the interaction space is exactly the same as in the original situation; paper can be moved, rotated and lifted above a table; also, the power equilibrium is preserved as long as the system can recognise and identify both parties. Second, to add value compared to the original situation, the envisioned system must be able to attach simple meaning to single sheets of paper – for instance, based on *handing over*, the system revises the owner of a sheet of paper and the attached information, based on *parallelising*, it identifies the information as options to be chosen from and based on the position of a paper in a pile, it suggests appropriate actions. Third, the impression of a professional and well-designed service can be enhanced by including additional, professional and interactive graphic elements projected onto paper; such graphics could support the diagrams drawn by advisors. Launching and shutting down the application can be synchronised with *unfolding* and *folding the interaction space*, and *receiving information* from the client could be supported by ad hoc scanning functionality. *Providing information*, as well as the calculation necessary for *parallelising* and *comparing the options* can be improved, such that the presented information is constantly updated and adjustable. These envisioned abilities set a range of technical requirements for the system: recognition of sheets of paper, handwriting recognition, the delay-free tracking and visualisation of movement, the identification of piles, persons and other elements, and specific grammar of interaction in advisory services,

including possible transitions. Nonetheless, given the importance of paper practices in institutional talk, this may open the door to effective support thereof.

6 Limitations and conclusion

Our results also have limitations, specifically regarding the applied methodology and the presentation of results. A rigid EMCA-like analysis would require concrete data, such as real-time recording of the unfolding interaction and blow-by-blow transcription, emphasising the study's reliability and internal validity. However, truly externally valid observations are only possible 'in the wild' – at the workplace in the de facto context. Since it was not possible to make reliable recordings at the bank and to observe further instances of mortgage advisory sessions during the time reserved for contextual inquiry, we decided to combine the data from the de facto context with the data obtained in the experiments, which led to a complex and vulnerable study design. This, we gave priority to the external validity and saw the field observations as a primary data source. Thus, the results, including the examples, are a reconstruction of the unfolding interaction from the notes, rather than a transcription of a single de facto event, which could possibly include more conversation statements from the participants. Still, the analysis was conducted with a great deal of care and with the use of strategies typical to the interpretative studies (coding, clustering, grouping, etc.).

Thus, our study offers a comprehensive description of the paper practices that occur in a financial service encounter underpinned by observations from the field as well as insights obtained through video analysis and workshops. We offer numerous insights that point to paper's complex roles in financial advisory encounters: First, paper is used by the advisor to impress a client, i.e. to induce specific emotions in the client and to transfer an impression of the bank and the advisor as trustful and orderly actors. Second, it has a meaning on its own, which depends on its position on the table, its content and its participation in specific practices. Finally, it embodies the encounter's institutional nature, confirms the advisor's interactional dominance, and has institutional identity on its own – designated for instance by a logo. Paper is far more than a medium for saving and presenting information: it is an interaction resource, a semiotic resource and an institutional resource; all these aspects of paper come into play during a financial advisory encounter.

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